

What Is Claimed Is:

1. A monoclonal antibody which binds to the ClfA protein from *S. aureus*
2. An antibody according to Claim 1 wherein the monoclonal antibody is raised against a protein selected from the group consisting of *S. aureus* Clf40 protein, the *S. aureus* Clf33 protein, and the *S. aureus* ClfA N3 protein.
3. An antibody according to Claim 1, wherein said antibody treats or prevents *S. aureus* infection in a human or animal.
4. An antibody according to Claim 1, wherein said antibody inhibits binding of staphylococcal bacteria to fibrinogen or fibrin.
5. An antibody according to Claim 1, wherein said antibody is suitable for parenteral, oral, intranasal, subcutaneous, aerosolized or intravenous administration in a human or animal.
6. An antibody according to Claim 1 wherein the monoclonal antibody is of a type selected from the group consisting of murine, chimeric, humanized and human monoclonal antibodies.
7. An antibody according to Claim 1 wherein the antibody is a single chain monoclonal antibody.
8. An antibody according to Claim 1 which comprises an antibody fragment having the same binding specificity of an antibody which binds to the *S. aureus* ClfA protein.

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9. An antibody according to Claim 1 that is raised against a protein having an amino acid sequence selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:4.
10. An antibody according to Claim 9 wherein the protein has an amino acid sequence encoded by a nucleic acid sequence according to SEQ ID NO:1 or SEQ ID NO:3, or degenerates thereof.
11. An antibody according to Claim 1 having a variable light chain having an amino acid sequence selected from the group consisting of SEQ ID NO:6, SEQ ID NO:10, SEQ ID NO:14 and SEQ ID NO:18.
12. An antibody according to Claim 1 having a variable light sequence encoded by a nucleic acid sequence according to a sequence selected from the group consisting of SEQ ID NO:5, SEQ ID NO:9, SEQ ID NO:13, SEQ ID NO:17, and degenerates thereof.
13. An antibody according to Claim 1 having a variable heavy chain having an amino acid sequence selected from the group consisting of SEQ ID NO:8, SEQ ID NO:12, SEQ ID NO:16, and SEQ ID NO:20.
14. An antibody according to Claim 1 having a variable heavy chain encoded by a nucleic acid having a sequence selected from the group consisting of SEQ ID NO:7, SEQ ID NO:11, SEQ ID NO:15, SEQ ID NO:19, and degenerates thereof.
15. Isolated antisera containing an antibody according to Claim 1.
16. A diagnostic kit comprising an antibody according to Claim 1 and means for detecting binding by that antibody.

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17. A diagnostic kit according to Claim 16 wherein said means for detecting binding comprises a detectable label that is linked to said antibody.

18. A method of diagnosing an infection of *S. aureus* comprising adding an antibody according to Claim 1 to a sample suspected of being infected with *S. aureus*, and determining if antibodies have bound to the sample.

19. A pharmaceutical composition for treating or preventing an infection of *S. aureus* comprising an effective amount of the antibody of Claim 1 and a pharmaceutically acceptable vehicle, carrier or excipient.

20. A method of treating or preventing an infection of *S. aureus* comprising administering to a human or animal patient an effective amount of an antibody according to Claim 1.

21. A method of inducing an immunological response comprising administering to a human or animal an immunogenic amount of an isolated ClfA protein from *S. aureus* selected from the group consisting of the *S. aureus* Clf40 protein, *S. aureus* Clf33 protein, and the *S. aureus* N3 protein.

22. A method of identifying monoclonal antibodies to the ClfA protein comprising adding an isolated protein selected from the group consisting of *S. aureus* Clf40, Clf33 and ClfA N3 to a sample suspected of containing anti-ClfA antibodies, and determining if antibodies have bound to the isolated protein added to the sample.

23. An isolated antibody according to Claim 1 that has the ability to bind to the amino acid sequence of SEQ ID NO:2.

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24. An isolated antibody according to Claim 1 that has the ability to bind to an amino acid sequence coded by the nucleic acid sequence of SEQ ID NO:1 or degenerates thereof.

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25. An isolated active fragment from the A domain of the ClfA protein from *S. aureus* selected from the group consisting of the Clf40 protein, the Clf33 protein and the ClfA N3 region.

26. An isolated antibody according to Claim 1 further comprising a physiologically acceptable antibiotic.

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27. An antibody according to Claim 1 wherein the variable heavy chain has a CDR1 region that includes the sequence RYSVH.

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28. An antibody according to Claim 1 wherein the variable heavy chain has a CDR2 region that includes the sequence MIWGGGNTDYN SALKS.

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29. An antibody according to Claim 1 wherein the variable heavy chain has a CDR1 region that includes the sequence KSSQSVLYSSNQKNYLA.

30. An antibody according to Claim 1 wherein the variable light chain has a CDR2 region that includes the sequence WASTRES.

31. An antibody according to Claim 1 wherein the variable light chain has a CDR3 region that includes the sequence HQYLSSYT.

32. An isolated antibody according to Claim 1 that is cross-reactive to multiple strains of *S. aureus*.

33. A humanized antibody according to Claim 6 wherein the variable light chain has the amino acid sequence according to SEQ ID NO:18.
34. A humanized antibody according to Claim 6 wherein the variable light chain is encoded by a nucleic acid having the sequence according to SEQ ID NO:17 or degenerates thereof.
35. A humanized antibody according to Claim 6 wherein the variable heavy chain has the amino acid sequence according to SEQ ID NO:20.
36. A humanized antibody according to Claim 6 wherein the variable heavy chain is encoded by a nucleic acid having the sequence according to SEQ ID NO:19 or degenerates thereof.
37. A monoclonal antibody according to Claim 1 which recognizes the A domain of *S. aureus* ClfA protein.

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